

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P03/126-do/rg	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2004/006337	International filing date (day/month/year) 11/06/2004	(Earliest) Priority Date (day/month/year) 11/07/2003
Applicant MERCK PATENT GMBH		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

BENZIMIDAZOLE CARBOXAMIDES AS RAF KINASE INHIBITORS

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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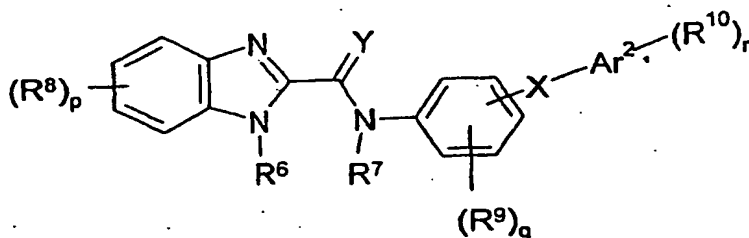
International application No.

PCT/EP2004/006337

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention relates to benzimidazole carboxamides of formula I, the use of the compounds of formula I as inhibitors of one or more kinases, the use of the compounds of formula I for the manufacture of a pharmaceutical composition and a method of treatment, comprising administering said pharmaceutical composition to a patient.

Accordingly, the compound of Formula I or a pharmaceutically acceptable salt thereof is administered for the treatment of diseases mediated by one or more kinase pathways, preferably by the raf kinase pathway, especially cancers.



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International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/4184 C07D401/12 C07D403/12 A61K31/4439 A61K31/506
A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BEILSTEIN Data, PAJ, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98/22103 A (HEDGE PHILIP JOHN ; ZENECA LTD (GB); BOYLE FRANCIS THOMAS (GB)) 28 May 1998 (1998-05-28)	1-30
X	claims 7,13; example 3 -----	31
Y	WO 00/18738 A (BROWN GEORGE ROBERT ; ZENECA LTD (GB); BROWN DEARG SUTHERLAND (GB)) 6 April 2000 (2000-04-06)	1-30
X	page 54, line 18 - page 55, line 31; claims 1,5,11 ----- -/--	31



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

31 August 2004

Date of mailing of the international search report

13/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Seymour, L

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Section Ch, Week 199838 Derwent Publications Ltd., London, GB; Class B02, AN 1998-440271 XP002294310 -& JP 10 182459 A (OTSUKA PHARM CO LTD) 7 July 1998 (1998-07-07) abstract page 12, scheme; examples</p>	1,2,6-31
X	<p>EP 1 101 759 A (NIPPON SODA CO) 23 May 2001 (2001-05-23) page 26, line 1 - line 15; claims 1,4,8-11; tables 2-1 page 68, compound 4-47</p>	1,2,6-31
X	<p>SHARMA P ET AL.: "Synthesis of new 2-(substituted benzothiazolylcarbamoyl) benzimidazoles as potential CNS depressants" INDIAN JOURNAL OF CHEMISTRY, SECTION B: ORGANIC, INCL. MEDICINAL., vol. 38, no. 11, 1999, pages 1289-1294, XP009035803 INPUBLICATIONS & INFORMATIONS DIRECTORATE, NEW DELHI. the whole document</p>	1,2,6-28
X	<p>US 3 661 925 A (MCCAULLY RONALD J ET AL) 9 May 1972 (1972-05-09) column 1, line 30 - line 47; example 3 column 2, line 9 - line 11</p>	1,2,6-11
X	<p>EP 0 284 828 A (BASF AG) 5 October 1988 (1988-10-05) claims 5,7; examples 31,33,34,49,50,75,82,83,89 page 7, line 5 - line 10</p>	1,2,31
X	<p>FR 1 517 719 A (INST FRANCAIS DU PETROL) 22 March 1968 (1968-03-22) formula II page 2, right-hand column</p>	1,2
X	<p>DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 1984, XP002294308 Database accession no. 101:23395 (DN) RN 90681-10-0 & PETYUNIN P A ET AL.: DEPOSITED DOC., SPSTL 920 KHP-D82, 1982,</p>	1,2
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 5 June 2003 (2003-06-05), XP002294309 Database accession no. 139:292169 (DN) RN 608143-72-2, 608143-73-3, 608143-74-4, 608143-63-1, 608143-64-2, 608143-65-3 & CIUGUREANU C: REVISTA DE CHIMIE, vol. 54, no. 3, 2003, pages 236-240, BUCHAREST, ROMANIA	1,2
P,X	----- VARNAVAS A ET AL: "Anthranilic acid based CCK1 antagonists: the 2-indole moiety may represent a ''needle'' according to the recent homonymous concept" EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, EDITIONS SCIENTIFIQUE ELSEVIER, PARIS, FR, vol. 39, no. 1, January 2004 (2004-01), pages 85-97, XP004492422 ISSN: 0223-5234 figure 2; table 1 -----	1,2,6-31

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/006337

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 12,13,15-28 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Information on patent family members

International Application No

PCT/EP2004/006337

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9822103	A	28-05-1998	AU 4956297 A CA 2267782 A1 EP 0941084 A1 WO 9822103 A1 JP 2001504478 T NO 992336 A ZA 9710314 A	10-06-1998 28-05-1998 15-09-1999 28-05-1998 03-04-2001 14-05-1999 18-05-1998
WO 0018738	A	06-04-2000	AT 254105 T AU 761361 B2 AU 6103499 A BR 9913947 A CA 2340454 A1 CN 1319092 T DE 69912823 D1 DK 1115707 T3 EP 1115707 A1 ES 2211172 T3 WO 0018738 A1 HK 1038556 A1 HU 0104060 A2 ID 28267 A JP 2002525358 T NO 20011492 A NZ 509836 A PL 346854 A1 PT 1115707 T RU 2219171 C2 SK 4212001 A3 TR 200100840 T2 US 6455520 B1 ZA 200102185 A	15-11-2003 05-06-2003 17-04-2000 12-06-2001 06-04-2000 24-10-2001 18-12-2003 01-03-2004 18-07-2001 01-07-2004 06-04-2000 30-04-2004 28-03-2002 10-05-2001 13-08-2002 23-05-2001 30-06-2003 11-03-2002 30-04-2004 20-12-2003 06-08-2001 22-10-2001 24-09-2002 18-06-2002
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US 3661925	A	09-05-1972	US 3740413 A	19-06-1973
EP 0284828	A	05-10-1988	DE 3708292 A1 DE 3865478 D1 EP 0284828 A1 ES 2026586 T3 JP 2663975 B2 JP 63270669 A US 4820757 A	29-09-1988 21-11-1991 05-10-1988 01-05-1992 15-10-1997 08-11-1988 11-04-1989
FR 1517719	A	22-03-1968	NONE	